

Agriculture Laboratory Proficiency (ALP) Program Individual Performance Analysis Report

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The Agriculture Laboratory Proficiency (ALP) Program Summer 2010 Round cycle 13 was completed November 12, 2010, with results provided by fifty-nine labs from the United States, Canada, Greece and South Africa. Proficiency samples consisted of five soils, three botanical and three water samples. Analytical methods evaluated are based on those published by AOAC, four regional soil work groups, the Soil Plant Analysis Council and Forestry Canada.

Standard Reference Soils (SRS), materials used for the soils and environmental programs were: SRS-1011 a Chenoa silty clay loam from Livingston Cty, IL; SRS-1012 a Tioga Fine sandy loam collected from Grant Cty, WV; SRS-1013 a Surrency loamy fine sand collected from Duval Cty, FL; SRS-1014 a Tachi clay collected in Fresno Cty, CA; and SRS-1015 a Clarion loam collected in Hancock Cty, IA. Standard Reference Botanical (SRB) materials were: corn stalk from Connecticut, potato Leaves from California and citrus leaves from California. Standard Reference Water (SRW) solutions represent agriculture water samples collected from: Windsor CO; San Joaquin, CA; and Weld Cty, CO.

This Individual Performance Analysis report presents results that are particular to your laboratory. All properties and samples for which your laboratory reported results are presented in this report. An analysis between and within laboratory performance for soil, botanicals, water and environmental properties will follow this page. A summary of results follows immediately after the analysis for each sample type. This summary condenses your between laboratory performance on a single page; this summary may be the best place to start the review of your results. In the future, this report will also present historical results to provide a more complete understanding of laboratory performance.

It is important to remember that all ALP Program evaluations are based on comparative and consensus statistics; users must be aware that small group statistics are inherently less robust than large group statistics, even though robust evaluations have been preferentially chosen. No comparative results are provided for analyses with fewer than 4 reported results. Results of all laboratories that reported for each property may be found in the web-based

Quick Key to your Performance Analysis Report

Lab Mean	The mean of the triplicate determinations submitted for each sample-property.
Grand Median	The median of all included Lab Means submitted for each sample-property.
MAD	The median of the differences (absolute values) between the Grand Median and the Lab Means.
95% Conf Interval	The estimated range of value which is likely to include the sample-property value, calculated from the Grand Median and the M.A.D.
WithinLab Performance, k	The ratio (standard or z-score) of each laboratory standard deviation within each sample-property and the WithinLab Avg STD (see below). A score of 1 indicates that variation within a laboratory for that sample-property was the same as the average variation.
WithinLab Avg STD	The average (sum of squares) of the standard deviations of the triplicate determinations submitted for each sample-property.
Laboratory-Sample Bias (from summary page)	The ratio (standard or z-score) of each laboratory difference, between the Lab Mean and the Grand Median, and the M.A.D. A score of 0 indicates agreement of the laboratory with the consensus average.



Performance Analysis Report - Test Cycle 13

CTS Lab Code: U6291A

Analysis # 802: Botanicals Properties

Test Code	Analysis	Units	Samples	Lab Mean	Grand Median	MAD	95% Conf Interval	WithinLab Performance, k	WithinLab Avg STD	Labs Rpt
202	NO3 - N Cd Rd.	mg/kg	SRB1007	2,458.7	2,728.2	226.0	2,072.8 - 3,383.5	0.10	193.5	14
			SRB1008	5,195.0	5,477.5	335.7	4,504.1 - 6,450.9	0.93	219.8	14
			SRB1009	266.3	191.0	49.3	48.1 - 333.9	1.48	25.7	14
206	PO4 - P	mg/kg	SRB1007	1,257.3	1,271.3	48.7	1,130.2 - 1,412.5	0.92	85.5	9
			SRB1008	728.3	715.3	25.3	641.9 - 788.8	0.55	59.2	9
			SRB1009	1,067.0	1,015.0	47.3	877.7 - 1,152.3	0.40	78.1	9
210	N- Dry Comb.	Percent	SRB1007	0.41 X	0.65	0.07	0.46 - 0.84	3.57 X	0.04	18
			SRB1008	2.97	2.94	0.07	2.73 - 3.15	2.83 X	0.08	18
			SRB1009	3.26	3.10	0.08	2.87 - 3.33	2.58 X	0.06	18
212	P	Percent	SRB1007	0.15	0.15	0.010	0.12 - 0.18	1.41	0.01	24
			SRB1008	0.16	0.16	0.007	0.14 - 0.18	0.99	0.01	24
			SRB1009	0.20	0.21	0.009	0.18 - 0.23	0.78	0.01	24
213	K	Percent	SRB1007	3.96	3.85	0.21	3.25 - 4.45	0.52	0.08	24
			SRB1008	2.83	2.81	0.17	2.32 - 3.31	0.08	0.07	24
			SRB1009	1.68	1.67	0.10	1.39 - 1.94	0.18	0.06	24
214	Ca	Percent	SRB1007	0.15	0.10	0.023	0.03 - 0.17	0.57	0.02	23
			SRB1008	1.56	1.54	0.09	1.27 - 1.81	0.39	0.07	23
			SRB1009	3.10	2.93	0.21	2.33 - 3.52	0.16	0.15	23
215	Mg	Percent	SRB1007	0.20 X	0.13	0.011	0.10 - 0.16	2.12	0.01	23
			SRB1008	0.90	1.00	0.07	0.81 - 1.19	1.93	0.02	23
			SRB1009	0.56	0.54	0.027	0.47 - 0.62	0.94	0.02	23
217	Na	Percent	SRB1007	0.030 X	0.010	0.006	0.000 - 0.028	2.02	0.005	20
			SRB1008	0.11 X	0.074	0.006	0.055 - 0.092	2.66 X	0.01	22
			SRB1009	0.057 X	0.027	0.004	0.014 - 0.040	1.54	0.004	22
220	Zn	mg/kg	SRB1007	7.03	7.33	1.27	3.66 - 11.01	0.33	1.25	23
			SRB1008	31.3	31.6	1.71	26.6 - 36.5	0.28	1.4	23
			SRB1009	43.5	44.7	2.33	37.9 - 51.4	0.11	1.6	23
221	Mn	mg/kg	SRB1007	5.80	5.99	0.34	5.00 - 6.98	0.21	1.23	22
			SRB1008	43.3	44.6	2.22	38.2 - 51.1	0.51	2.2	23
			SRB1009	70.5	73.7	3.70	63.0 - 84.4	0.04	2.6	23
222	Fe	mg/kg	SRB1007	51.6	64.3	9.91	35.6 - 93.1	0.41	9.7	23
			SRB1008	363.4	424.7	46.9	288.7 - 560.8	0.08	24.7	23
			SRB1009	103.8	105.3	12.3	69.6 - 141.1	0.02	9.6	23
223	Cu	mg/kg	SRB1007	3.47	3.31	0.23	2.64 - 3.98	0.96	0.87	23
			SRB1008	4.87	4.87	0.82	2.50 - 7.24	0.79	0.65	23
			SRB1009	10.8	10.8	0.93	8.1 - 13.5	0.38	0.5	23



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Laboratory Performance Summary - Botanicals Properties

Test Code	Analysis	Performance Review of Laboratory-Sample Biases (numbers closer to zero indicate agreement with other laboratories)		
		SRB1007	SRB1008	SRB1009
202	NO3 - N Cd Rd.	-1.19	-0.84	1.53
206	PO4 - P	-0.29	0.51	1.10
210	N- Dry Comb.	-3.54	0.38	1.98
212	P	0.45	-0.07	-0.73
213	K	0.52	0.12	0.15
214	Ca	2.14	0.18	0.86
215	Mg	5.97	-1.51	0.50
217	Na	3.16	5.18	6.68
220	Zn	-0.24	-0.17	-0.50
221	Mn	-0.57	-0.59	-0.86
222	Fe	-1.29	-1.31	-0.12
223	Cu	0.69	0.00	0.07